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MET–002

CERTIFICATE IN CONDITION MONITORING (CCOMO)

Term-End Examination

December, 2024

MET–002 : MECHATRONICS

Time : 3 Hours *Maximum Marks : 70*

Note : (*i*) *Attempt any* ***seven*** *questions.*

(*ii*) *All questions carry equal marks.*

1. Explain the following terms related to transducers : 4×2.5=10

   (a) Linearity

   (b) Sensitivity

   (c) Resolution

   (d) Scale readability

2. Discuss any *two* methods by which the efficiency of a reciprocating compressor can be improved. 10

3. Discuss the operating characteristics of a DC motor. 10

4. What are piston pumps ? Explain their working principle with the help of a neat sketch. 10

5. (a) Compare serial and parallel data communication. 5

   (b) What is the application of counters in industrial control system ? 5

6. Describe the process of position control along a trajectory. 10

7. (a) Describe the functioning of a pilot operated check value. 5

   (b) What will be percentage increase in the pressure drop across a flow control valve, if the flow is doubled ? 5

8. Describe *four* different sensing modes for photo-electric sensors. 10

9. Define a microprocessor. How does it work ? 10

10. Write short notes on any *two* of the following :

5+5=10

(a) PLC hardware

(b) Actuators

(c) Hydraulic cylinder

(d) Hysteresis

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